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DATAGM: CURATING AN ENVIRONMENT FOR CHANGE

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ABSTRACT

Open Data Cities is an ongoing investigation into how a city may move towards adopting, in specific terms, an open data framework, and, in general terms, openness. It is an experiment in participatory policy and infrastructure, and in curating an environment for change. Distinctively, our focus is on the entire ecosystem at once, and developing an ecology around open data to create sustainable impact. One dimension of this infrastructure is DataGM which, as an output of the Open Data Cities research, and an artefact or 'Open Digital Resource', is the focus of this paper.

DataGM used a process of participatory policy and action learning in the Greater Manchester city region. We engaged policy makers from 10 local authorities, data managers from agencies including Transport for Greater Manchester, digital businesses, and supported a grass-roots developer community. Our development approach drew significantly on Actor-Network Theory (ANT). According to ANT, the on–going processes of "translation" are key sources of social order. "Translation" generates ordering effects, such as organisations, institutions, devices, and agents. Each of these have their own "resistances", and social change, as evidenced by DataGM, is very much about a struggle of reorganising the resources and relations in the 'actor–network'. This paper presents an analysis of the practical application of this theory to our problem domain and, reflecting on our experience, makes recommendations for participatory policy and infrastructure intervention at a city scale.

INTRODUCTION

The Open Data movement has freed up information held by public agencies, creating opportunities for innovation in public and social services. Making data available in accessible formats to communities of developers, hackers and digital entrepreneurs makes it possible to develop new applications and services based on this data and create both social and economic value (Open Data Institute, 2013). Open Data Cities — a FutureEverything Innovation Lab project since 2009 — builds upon this foundation and has led to the creation of new digital infrastructure, in the shape of DataGM: the Greater Manchester Datastore. This provides a framework and a resource for people to analyse, improve and build new services. The formation of DataGM created a unique opportunity for action research into participatory policy and infrastructure at city scale.

DataGM emerged following the intervention of FutureEverything, an actor external to local government, and through a focus on communities of practice. Our approach was to consider the nascent Open Data community as a whole and develop

participatory strategies to coordinate the various actors. This gave us cause to draw upon Actor-Network Theory (ANT). ANT is a methodological framework with which to conceptualise social phenomena, such as this, in terms of networks (Latour and Woolgar, 1986; Bijker and Law, 1992; Callon, et al., 1986; Latour, 1999). ANT posits that an entity cannot be understood in isolation; instead, it is always linked to a heterogeneous network of resources and agents that define that entity as the specific entity in question (Nardi, et al., 2000). Questions of subjectivities, agencies, actors, and structures have been of perennial interest in Design Anthropology and Social Innovation (Schuler, et al., 1993), and therefore, ANT has become increasingly important in recent times due to the infinite interconnectedness of contemporary culture and the extension of the network through the instrumentation of our environment with non-human actants (Berry, 2008; Dunne and Raby, 2001).

In the following sections of this paper we introduce key concepts of ANT. FutureEverything, Open Data Cities and the DataGM case study are then introduced. We describe the resistances encountered and strategies deployed to overcome them. Finally, drawing on the literature, we reflect upon the practical steps required when implementing participatory policy and infrastructure at city scale, and the issues that arise at the end of this process: dilemmas, challenges, opportunities envisioned from this experience, and how it can cross- fertilise other projects of the same type, in other contexts.

LITERATURE AND THEORY

ANT originated in studies of scientific practices. According to ANT, society consists of networks of both human and non–human actors (Latour and Woolgar, 1986; Bijker and Law, 1992; Callon, et al., 1986; Latour, 1999). A key concept in ANT is "translation." The total system of actors in the full social network is extremely complicated. Reduction of this complexity is therefore a necessary requirement for practical action. Translation means a process where complicated sub–networks become represented by actants, and by which the complex underlying structure becomes a "black box" for practical purposes. Translation means that complex sub–networks become "punctualised," and start acting like a unified entity, from the point of view of those actors who interact with the sub–network. (Bijker and Law, 1992). Michel Callon (1986) has defined 4 moments of translation: (i) Problematisation; (ii) Interessement; (iii) Enrollment and; (iv) Mobilisation of allies.

Translation means that complex networks can be taken for granted. But at the same time it means that the point of translation also becomes a locus of power and control. The effects produced by the translated sub–network become resources that can be located and mobilised. Through this process of translation the "punctualised" network can be represented as if it were owned by the actor who manages the translation (Toumi, 2007).

DATA AND METHODS

FUTUREEVERYTHING

To provide context for this study, it is useful to introduce FutureEverything and the overriding methodological frame within which DataGM was developed:

FutureEverything is a research programme conceived and developed to investigate and participate in the emergence of a digital world. Informed by various art and design methodologies, the sociology of science, and by understanding of the unstable, liquid, shifting character of the digital space, the research actively seeks to construct and study the 'actor-world' (Callon, et al., 1986) of the digital domain. FutureEverything presents digital culture at its limit, and makes apparent the ways it is brought into being, the local processes of ordering, and the necessary negotiations and struggles that occur at that limit. It does this by placing a wide range of agents (human, software, and other) into varying constellations, and by orchestrating and observing the circulation of ideas, technologies, actions, and the surface effects that result.

The approach in DataGM was to *curate an environment for change*. Here 'curation' is understood to combine purposeful advocacy with participatory co-creation. We were active participants, not disinterested observers. The project emerged from and was informed by a community of practice around open source culture and digital arts.

OPEN DATA CITIES AND DATAGM

Developed in May 2009, the Open Data Cities project sought to encourage the public bodies of the Greater Manchester Region to open up their publicly held datasets for the benefit of citizens, businesses and public bodies alike. The project looked at similar schemes that were taking place in North America, most notably Vancouver and Washington DC. The project was initially focused on the social and business innovation case for the release of data whilst being aware of the wider context of re-enfranchisement, transparency and efficiency.

At this time, there was an explosion of interest behind the impact of Open Data and the move to a more transparent and open society. Locally, there was the emergence of the Greater Manchester City Region, as a new administrative entity. The FutureEverything team proposed that the associated structural reforms could create an opportunity for the development of Open Data policy and practice in Greater Manchester.

The Open Data Cities project was conceived as an eighteen month social and business innovation project. Our proposal was to develop an *Open Data Innovation Ecology* in Greater Manchester. In this period, there was a lack of activity nationally with regard to Open Data, and the case for Open Data was not proven. For the project to advance, it was deemed prudent for a pilot to be conducted to discover demand. This pilot became DataGM.

Building upon initial scoping and advocacy by the FutureEverything team, the Open Data Cities project was developed in two phases, and funded through the Manchester Innovation Investment Fund, a vehicle of NESTA, North West Development Agency and Manchester City Council. The first phase was wholly coordinated by FutureEverything, and the second phase jointly with Trafford Metropolitan Borough Council (Trafford MBC).

DataGM was created to help public sector organisations release and bring together in one place, as much of the data they hold as possible. It was the output of the FutureEverything Open Data Cities Innovation Lab, and as such the first municipal Open Data datastore and policy framework in the UK to have been established by independent actors, rather than by the Mayor's office or equivalent local government agency.

It is important to note that as a 'datastore', DataGM is not original. We used the same technical system as data.gov.uk. What is innovative is our intervention as an external agency and approach to stakeholder engagement, drawing on ANT to "translate" the emergent network. As is described in the following sections:

We identified three key communities ("sub-networks") that the project needed to engage in order to move Greater Manchester towards Open Data. Each had to be approached and developed in different ways. The three Greater Manchester communities targeted were:

- Developers, designers and activists.
- Local Authority IT managers, FOI officers, system administrators and developers.
- Political decision makers.

A wider national and international community of digital culture specialists was also targeted.

The project proceeded through advocacy and developing agile issue-based alliances. As an independent agency outside of local government, FutureEverything provided a 'neutral intermediary' (Howells, 2006) who could take on and mitigate risk. Events and small scale projects helped to build trust and to bridge between organisational and cultural silos.

DEVELOPERS, DESIGNERS AND ACTIVISTS

It was essential we had support from the grassroots community for three reasons:

1. Grassroots community would prove the demand case for Open Data.
2. This community is most likely to see the potential of data outside the purpose for which it was originally intended.
3. The knowledge held within the community is essential in enabling local authorities to release data.

The user group – Open Data Manchester – was created through Open Data Cities to be the forum for the grassroots community to discuss and share knowledge around Open Data, manifesting itself as user group of fifty members. The Open Data Manchester community is made up of developers, activists, artists, journalists, city officials, small and medium sized digital business, but no large digital companies.

LOCAL AUTHORITY IT MANAGERS, FOI OFFICERS, SYSTEM ADMINISTRATORS AND DEVELOPERS

These were the people who had their 'hands on the data', so to speak. Initially it was thought that they would not be in a position to release data without approval from the executive. Surprisingly this was not the case, with regard to Trafford MBC and the release of Open Election Data. Within three days of staging an event on Open Data for the local digital sector – at the Manchester Social Media Café – Trafford MBC had released all their local election data back to 1987.

The participatory process was able to effect change within the local authority, circumventing formal policy mechanisms by creating a new reality 'on the ground'.

Several routes were tried in engaging with this group and although we were buoyed by the early success of the release of election data, one of the problems we had was identifying who were the most relevant people to speak to. Through the Association of Greater Manchester Authorities (AGMA) Collaborative Improvement and Efficiency Programme we informed Transformation Teams throughout the region as to the DataGM project and how it fits in with the improvement and efficiency agenda. One to one meetings were conducted with Transformation Directors at Trafford MBC, Manchester City Council and Wigan MBC. Consultation took place with the Business and Transformation team at Salford City Council and through this Salford developed an Open Data portal for their council website with datasets being identified and regularly made available.

POLITICAL DECISION MAKERS

This was always seen to be the most difficult group of people to engage. At the start of the project there was no engagement on Open Data with any elected Members of Local Authorities. Progress was made with the transformation teams who generally sit at, or just below executive level.

In the early stages, FutureEverything was operating entirely independently. Its ability to influence was aided by securing support and advocacy from various regional individuals and agencies. Through a close working relationship with a regional innovation agency, Manchester Knowledge Capital, we were able to have dialogue with GMPTE at executive level and early on identified two major datasets, Journey Planner timetable information and regional NaPTAN data, that were offered subject to licensing being agreed. The project secured support from MDDA (Manchester Digital Development Agency) and the BBC. The advocacy of NESTA, a national agency, was significant in generating regional engagement.

Later, FutureEverything and Trafford MBC worked in partnership on the project – up to and beyond the launch of DataGM – with key advocates emerging at Trafford MBC, such as Theresa Grant.

Outside of this, we engaged city leaders and politicians in events, bringing them into contact with the Open Data community.

OTHERS

As well as targeting the above communities, effort was put into engaging with a broad range of expertise and activism within the UK and internationally. The reason for approaching this group was to give credibility to the project by creating a body of expertise that could be called upon. It was also significant for the impact for the programming of the Open Data strand and workshops at the annual FutureEverything conference by placing the Open Data Cities and DataGM projects in an international context.

EVALUATION OF DATA

Evaluation of data was a dynamic process, integral to our approach, which involved: cycles of action, observation and reflection, then action again. Data collected was mainly qualitative; our focus was on gathering stories rather than statistics. This included:

- Descriptions of interventions: documentation of the process of developing the project, records and reflections from participants, using for example meeting minutes and a journal to keep track of insights, observations, anecdotes and questions, and reflections on the research process itself.
- Participatory evaluation and review: regular meetups and workshops with the Open Data community created feedback and evaluation as an inherent dimension of the process, building a critical community of Open Data practice.
- Photographic and video documentation.

RESULTS

DataGM, and the Open Data Manchester developer and business community, can be seen as tangible outcomes of the project. DataGM and Open Data Manchester are both active at the time of writing, three years after they were first established.

The project succeeded in creating a network of actors and interests that was stable and had sufficient agency for DataGM to be established. DataGM in this sense *is* that network of actors and interests, more than it is simply a 'datastore' – an artefact or open digital resource – in a narrow sense.

The overall approach, of addressing the entire ecosystem at once and "punctualising" the key communities can be considered successful overall. The actants behave like a unified entity from the point of view of actants in the broader actor network – specifically, the executive, data managers and active developer communities – and effects produced can now be seen as resources that can be located and controlled. A focus on active and engaged communities helped to build sustainability into the system.

But the punctualisation was only partially successful. DataGM has been adopted by some local authorities and agencies in Greater Manchester. Others continue to propose alternatives. For them DataGM does not 'stand for' Open Data policy and infrastructure in the city region. The project did not – by some considerable distance – succeed in overcoming a large number of institutional and other resistances, principally within and between the local authorities.

Impact can be evidenced by the introduction of Open Data policy in the Greater Manchester region. On the ground, a broadening acceptance for Open Data policy and practice is demonstrated by new datasets released by public bodies; a programme of Hackathons and Innovation Challenges supported by Manchester City Council, FutureEverything and other partners; and strategic emphasis on Open Data in a range of settings, for example the recently awarded £32 million LSTF bid by Transport for Greater Manchester. The level of activity and engagement that has been generated overall positions Greater Manchester as a leading centre for Open Data practice and policy in the UK.

Ultimately, a major finding, and limitation, of the project was that Greater Manchester was not large enough to sustain a market for Open Data applications. However, this observation, as well as the project focus on communities as drivers for Open Data development has informed a later EU FP7 funded project – CitySDK – creating open interoperable digital service interfaces between cities and supporting an EU-wide market for Open Data applications and services.

DISCUSSION: CURATING AN ENVIRONMENT FOR CHANGE

The case discussed in this paper presents an alternative to linear and 'top down' approaches to policy and technology development. The Open Data datastore and policy framework was not solely 'designed' or 'planned'. Instead, it emerged following the intervention of an actor external to local government. The result of the intervention was to create a 'space' for further actants to engage. "Mobilising these allies" required an openness on behalf of the primary actor (FutureEverything) to the agency of divergent voices and practices. More, it required adaption to the fluid nature of change and resistances between these "translated" network actants. That is to say, this action research trialled a way of working combining purposeful advocacy with participatory co-creation. It is this set of processes, developed during the DataGM case study, that we call curating an environment for change.

In the role of participants and observers, we noted who emerged as the significant actors and agents in the actor–network. Of particular interest were sites of *agency* and *authority*, and the way that *authority is performed in the name of the social*.

DataGM is the municipal datastore for the Manchester city region, and in this project – as in Open Data more widely – the focus is primarily on government data. Hence, the expected sites of authority are Greater Manchester governmental authorities and agencies. However, in the case of DataGM, it was FutureEverything, the local authorities, and the Open Data

Manchester community that variously generated and managed the ordering effects in the actor–network. Through the lens of Actor-Network Theory, we see that points of translation become a locus of power and control. This implies authority is mobile, and not always bounded by a predefined entity such as a government agency.

The site of authority is continually renegotiated. DataGM now administered by a local authority – Trafford MBC – but much Open Data practice and many initiatives are led by Open Data Manchester and FutureEverything. We see that the "translation" generates ordering effects that are contested and need to be constantly 'performed'.

LEARNINGS AND RECOMMENDATIONS

The project led to a number of insights into way that regional innovation ecosystems be created and sustained. Recommendations for participatory policy and infrastructure intervention at a city scale emerging from the project include:

- A focus on active and engaged communities can build sustainability into the system.
- Neutral intermediaries can play a significant role and can take on and mitigate risk.
- Events and small scale projects help to build trust and to bridge between organisational and cultural silos.
- Develop mechanisms for what we term 'vertical connectivity' between civic leaders and grass roots communities.
- The translations need to be constantly performed.

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